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Examining the Effectiveness of Fixed Price Contracts on Project Performance: A Case Study of Educational Infrastructure in Nalolo District

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Abstract

The use of fixed price contracts has become a common approach in construction project delivery, offering cost certainty and minimizing the risk of budget overruns. In public sector projects, particularly in the education sector, fixed price contracts are often preferred because they align with limited budget allocations and the need for accountability in resource use. Project performance under fixed price contracts can be influenced by several factors, including the clarity of the scope of work, the relationship between the contract type and performance outcomes, contractors' perceptions, and the level of flexibility during execution. A poorly defined scope of work can lead to disputes, delays, or compromised quality, while the financial discipline inherent in fixed price contracts may limit a contractor's ability to adapt to unforeseen challenges. Additionally, understanding the decision-making processes and flexibility within fixed price contracts is important for identifying areas for improvement that can enhance project outcomes. This study sought to examine the effectiveness of fixed price contracts on project performance, focusing specifically on educational infrastructure projects in Nalolo District. The study's specific objectives included; examining the effects of scope of work in fixed price contracts on project performance, determining the relationship between a fixed price contract and project performance, exploring local contractors' perceptions of fixed price contracts, and understanding the decision-making process and flexibility during contract execution. The study adopted an exploratory case study design, employing both qualitative and quantitative research methods. Data was collected from stakeholders involved in educational infrastructure projects in Nalolo District using structured questionnaires. Quantitative data was analyzed using STATA, with the Chi-square test applied to examine associations between variables such as contract scope, fixed-price contract features, and project performance indicators. The study found that fixed-price contracts significantly influence project performance in educational infrastructure projects in Nalolo District. The study found that fixed-price contracts in Nalolo District's educational projects strongly influence performance. Scope clarity was high (83%), positively affecting timelines (79%), cost control (88%), quality, stakeholder satisfaction (81%), and resource allocation (85%), while scope changes caused rework (70%) and delays (scope creep 75%, task ambiguity 68%). Fixed contracts improved project success (73%), cost predictability (87%), deadlines (71%), client satisfaction (83%), and output predictability (76%), though disputes occurred sometimes or often (69%). Contractors generally favoured the model (71%) for cost certainty (82%) and clear scope (75%) but faced challenges managing changes (88%), cost overruns (85%), and tight timelines (78%). The contracts were mostly inflexible (71%), with top-down decision-making common (72%) and adjustment mechanisms often inadequate (61%), highlighting a trade-off between predictability and flexibility. The study recommends ensuring detailed and well-defined scopes to minimize delays, rework, and cost overruns. Fixed-price contracts should incorporate clearer mechanisms for managing changes to improve flexibility. Training and guidance for contractors on risk and change management can enhance performance outcomes. Finally, stakeholder collaboration and adaptive decision-making should be strengthened to balance predictability with responsiveness.

Keywords: Educational Infrastructure, Effectiveness, Fixed Price Contract, Nalolo District, Project Performance

1. Introduction

1.1 Background of the Study

Project delivery in the construction industry relies heavily on contractual arrangements that govern responsibilities, risks, and financial commitments (Osifo, 2025). A fixed price contract, also known as a lump sum contract, is among the most widely applied procurement methods in both developed and developing countries. Under this arrangement, the contractor agrees to deliver the project at a predetermined price, shifting the risk of cost overruns from the client to the contractor (Othman, 2021) [38]. Theoretically, this system encourages efficiency, cost predictability, and accountability in project delivery. However, it can

also result in reduced flexibility, disputes over scope changes, and potential compromise on quality if contractors aim to protect profit margins (Ahmadisheykhsarmast, 2020). Globally, the application of fixed price contracts has been embedded in construction project delivery frameworks for decades (Evans, 2022). Countries such as the United States and Australia have long adopted this model, particularly in public infrastructure projects, to ensure accountability in the use of taxpayers' money (Hansa, 2024). International lending and development agencies, such as the World Bank and African Development Bank, also recommend contract forms that promote transparency and reduce financial risks for governments. The use of fixed price contracts aligns with broader global trends in project management emphasizing value-for-money, time efficiency, and reduced financial exposure (Zhao, 2023).

In the African context, fixed price contracts have become a common mechanism for delivering public infrastructure projects (Asiedu, 2020). Governments and donor agencies increasingly rely on this procurement method to safeguard limited public resources, especially in education and health infrastructure projects. However, studies across the continent reveal mixed outcomes. While some projects have benefited from cost containment, others have suffered from contractor underperformance, delays, litigation, and quality concerns. These outcomes often stem from challenges such as inadequate project planning, inflation, fluctuating material costs, and weak monitoring mechanisms (Chileshe, 2022).

In Zambia, fixed price contracts are widely applied in the delivery of infrastructure projects funded through government budgets, Constituency Development Fund (CDF), and donor-supported programs (Mwamba, 2022). The Public Procurement Act and related policy frameworks encourage the use of contract forms that enhance transparency, cost-effectiveness, and accountability in the utilization of public resources (Sipalo, 2021) [47]. Nalolo District, like many rural districts in Zambia, faces significant challenges in educational infrastructure provision. Shortages of classrooms, dilapidated facilities, and limited resources have necessitated government and donor interventions through construction projects (Namushi, 2023) [33]. The adoption of fixed price contracts in these projects is aimed at ensuring value-for-money and timely delivery. These challenges raise questions about the extent to which fixed price contracts achieve their intended purpose in such contexts (Mwale, 2023).

Poorly delivered projects undermine access to education, waste scarce public resources, and erode public trust in governance structures (Nkolola, 2025). On the other hand, successful implementation enhances learning environments, promotes equity in education, and contributes to human capital development. This underscores the need to examine the effectiveness of fixed price contracts as a procurement tool in rural education infrastructure projects, with Nalolo District providing a practical case for analysis. This study is situated within this broader discourse, aiming to assess how fixed price contracts influence project performance in terms of cost, time, and quality outcomes. The findings will contribute to policy debates on procurement strategies, provide insights for project managers and policymakers, and inform future approaches to educational infrastructure development in Zambia and similar contexts.

1.2 Statement of the Problem

In Zambia, the implementation of fixed-price contracts for educational infrastructure projects has not consistently yielded the anticipated outcomes. Despite substantial investments, these projects often experience delays, cost overruns, and subpar quality, undermining the intended benefits (Mhango, 2024) [28]. A study on construction projects in Zambia highlighted that inadequate contract management practices are prevalent, with many projects experiencing delays and cost overruns due to poor procurement and monitoring processes (Kafula, 2023). Issues such as land identification delays before contract awards have been reported, further complicating project execution. The Zambian government's emphasis on education infrastructure, supported by initiatives like the Zambia Education Enhancement Project (ZEEP), aims to improve access to quality education (Mvula, 2023). However, the persistent challenges in project execution, particularly in rural districts, hinder the realization of these objectives. This study is essential to assess the effectiveness of fixed-price contracts in the context of Nalolo District's educational infrastructure projects. By identifying the underlying issues and evaluating the impact on project performance, the research aims to inform policy decisions and improve procurement strategies, ensuring that investments translate into tangible educational benefits for the community.

1.3 Objectives of the Study

1.3.1 General Objectives

To examine the effectiveness of fixed price contracts on the performance of educational infrastructure projects in Nalolo District.

1.3.2 Specific Objectives

1. To examine the effects of scope of work in fixed contract on project performance.
2. To determine the relationship between a fixed contract and project performance.
3. To explore the local contractor's perception on using fixed price contracts on project performance.

1.4 Research Questions

1. How does the scope of work in a fixed-price contract affect project performance?
2. What is the relationship between the use of fixed-price contracts and project performance?
3. What are local contractors' perceptions of using fixed-price contracts in relation to project performance?

2. Literature Review

2.1 Scope of Work

In project management, the scope of work (SoW) serves as a foundational element in defining the responsibilities and expectations of both the client and the contractor (Gitahi, 2023) [13]. It establishes the boundaries within which the project will be executed, providing clarity on what is included and, equally important, what is excluded from the project. In fixed-price contracts, the SoW carries particular significance because the contractor assumes full financial responsibility for delivering the agreed-upon outcomes within the pre-established price (Hassan, 2023). Any ambiguity or gaps in the scope can translate directly into financial risk, disputes, or delays, making it essential to

develop a comprehensive and precise scope document (Metwally, 2025).

The scope of work typically begins with a clear description of the project deliverables. These deliverables represent the tangible or intangible outputs that the contractor is expected to produce, whether they are physical products, services, reports, or system functionalities (Maina, 2024). Specifying deliverables in detail helps align client expectations with what the contractor will provide and minimizes the likelihood of disagreements. When deliverables are well-defined, the contractor can allocate resources effectively and plan the project schedule with greater accuracy. Conversely, incomplete descriptions can result in the contractor underestimating the effort required, leading to potential delays and cost overruns (Rumane, 2025).

Another essential component of the scope is the identification of tasks and activities necessary to achieve the project deliverables. This involves breaking down the project into smaller, manageable work items, often organized using techniques such as a work breakdown structure (WBS) (Hassan, 2023). By clearly specifying the tasks, contractors can plan labor, equipment, and material requirements accurately, which is crucial in a fixed-price arrangement where additional work beyond the defined scope typically cannot be billed without renegotiation. Proper task definition also provides a basis for monitoring progress, identifying bottlenecks, and ensuring that work is executed systematically and efficiently (Maina, 2024).

Timeline and milestones are integral parts of the scope of work, outlining when specific tasks or deliverables must be completed. Establishing a detailed schedule enables both parties to track project progress, anticipate delays, and coordinate resources effectively (Gitahi, 2023) [13]. Milestones serve as checkpoints for performance evaluation and approval, allowing clients to assess whether the project is proceeding as planned. Without a clearly defined timeline, projects are susceptible to delays, resource conflicts, and extended completion periods, which can erode the contractor's profit margins in fixed-price agreements (Metwally, 2025).

Quality standards are another critical element of the scope. These standards specify the level of performance, technical requirements that the deliverables must meet (Abeysinghe, 2022) [1]. Including quality specifications ensures that both the client and contractor have a shared understanding of expectations, reducing the risk of disputes over whether the work meets contractual requirements (Kärki, 2023) [17]. The scope of work should explicitly define exclusions and assumptions. Exclusions clarify what is outside the contractor's responsibilities, preventing misinterpretation and minimizing the risk of scope creep. Assumptions provide context for planning, highlighting factors on which the contract is based, such as site conditions or availability of client-provided resources. In fixed-price contracts, these components are vital because any deviation from the assumptions may require renegotiation or risk absorption by the contractor (Gbabo, 2024).

Effective cost management and budget control are critical to the success of any project, particularly in fixed-price contracts, where the contractor assumes the financial risk for completing the work within the agreed-upon price (Del Pico, 2023) [7]. A well-defined scope of work forms the foundation for accurate cost estimation and resource allocation. By clearly specifying project deliverables, tasks, quality standards, and timelines, contractors can develop detailed budgets that reflect the true cost of labor, materials, equipment, and overheads (Kepher, 2024) [20]. This clarity allows for realistic financial planning, reducing the likelihood of unexpected expenses and enabling the contractor to allocate resources efficiently throughout the project lifecycle. Precise budgeting is particularly important in fixed-price contracts because any unplanned work or deviations from the scope must typically be absorbed by the contractor unless formally renegotiated as change orders (Karki, 2023).

When the scope of work is incomplete or ambiguous, it introduces significant risks that can undermine cost management. Undefined or poorly articulated scope elements may result in hidden costs, as contractors encounter unanticipated tasks, additional materials, or extended labor requirements that were not accounted for in the original budget (Abeysinghe, 2022) [1]. These costs can arise from factors such as unforeseen site conditions, regulatory changes, or client requests that fall outside the documented scope. Contractors may respond to these challenges in several ways: they might cut corners to maintain profitability, potentially compromising the quality of deliverables, or they may request additional funds through formal or informal change orders (O'Connor, 2020). Both scenarios can adversely affect project performance, either by reducing the final product's quality or by delaying project completion while financial adjustments are negotiated (Varma, 2025) [50].

Risk management is a critical component of project performance, particularly in fixed-price contracts, where the contractor assumes primary responsibility for completing the work within a predetermined price. The allocation and management of risk in these contracts are largely determined by the scope of work (Maina, 2024). A clearly defined scope minimizes uncertainty, specifying the tasks, deliverables, timelines, quality standards, and exclusions. This clarity reduces the likelihood of disputes, unplanned work, and financial exposure for both the contractor and the client. Conversely, an ambiguous or incomplete scope significantly increases the risk exposure for all parties involved, requiring proactive management strategies to mitigate potential negative outcomes (Metwally, 2025).

Mitigation strategies are essential to manage risk in fixed-price contracts. Contractors often include risk allowances or contingency clauses to account for uncertainties associated with an incomplete or ambiguous scope (Gitahi, 2023) [13]. These provisions provide a financial buffer for unexpected work or unforeseen conditions, helping maintain cost-effectiveness while ensuring the project can be completed as agreed (Hassan, 2023). Risk assessments, scenario planning, and thorough contract review are also commonly employed to anticipate potential challenges and allocate responsibilities appropriately. Effective communication between clients and contractors further reduces misunderstandings and allows for collaborative problem-solving when deviations from the initial scope occur (Maina, 2024).

Change management and flexibility are essential considerations in project execution, particularly in fixed-price contracts where the contractor assumes responsibility for delivering agreed-upon work at a predetermined price (Metwally, 2025). Unlike time-and-materials contracts, fixed-price contracts are inherently less flexible because any

additional work or deviation from the original scope typically cannot be accommodated without formal approval or renegotiation. The scope of work therefore plays a central role in determining how easily changes can be managed and absorbed within the project (Qais, 2021) [41]. A well-defined scope serves as a baseline, clearly outlining deliverables, tasks, timelines, quality standards, and exclusions. This clarity helps minimize unnecessary changes and disruptions by providing both the client and the contractor with a shared understanding of what constitutes the agreed work, reducing ambiguity and potential conflict (Rumane, 2025).

When the scope is comprehensive, contractors can plan resources, schedules, and budgets with greater precision, which limits the likelihood of ad hoc adjustments during project execution (Abeysinghe, 2022) [1]. Well-defined scopes establish clear boundaries for the work, making it easier to identify when a requested modification falls outside the contract and should be handled through a formal change-order process. This reduces the risk of scope creep, which can lead to cost overruns, delays, and strained client-contractor relationships. Additionally, a clear scope enables contractors to anticipate potential risks and design contingency strategies, providing a controlled framework for addressing necessary changes without disrupting overall project performance (Kärki, 2023) [17].

Conversely, projects with poorly defined scope are more vulnerable to frequent and unplanned changes. Ambiguities in deliverables, tasks, or quality expectations can prompt clients to request additional work or revisions as the project progresses (Gbabo, 2024). In fixed-price contracts, accommodating these changes often requires renegotiation of contract terms, which can be time-consuming and may result in disputes over pricing, timelines, or quality. Frequent modifications outside the original scope can strain resources, increase administrative workload, and create confusion among project teams, negatively impacting performance. In some cases, contractors may be forced to absorb costs or accelerate work to meet deadlines, which can compromise quality and profitability (Owolabi, 2024).

2.2 Relationship Between Fixed Price Contracts and Project Performance

Fixed-price contracts are widely used in project management, particularly in construction, engineering, and service delivery sectors, due to their predictable cost structure and clear allocation of financial risk (Ford, 2024). In these contracts, the contractor agrees to deliver a project or a specified portion of work for a predetermined price, regardless of the actual costs incurred during execution. This contractual structure directly influences project performance across several dimensions, including cost management, schedule adherence, quality control, risk allocation, change management, and stakeholder satisfaction (Nishaant, 2025).

Understanding the relationship between fixed-price contracts and project performance requires examining both the advantages and limitations of this contract type, as well as the mechanisms through which scope, planning, and risk management affect outcomes (Varma, 2025) [50].

The most immediate impact of fixed-price contracts on project performance is in cost management and financial predictability (Ezzat, 2025). By agreeing on a set price at the outset, clients can plan budgets with confidence, knowing that the project cost is largely fixed unless formal change orders are introduced. For contractors, this arrangement imposes a strong incentive to estimate costs accurately and control expenditures, as any overruns directly affect profitability.

In addition to cost considerations, fixed-price contracts influence schedule adherence and timely completion. A defined contract price encourages contractors to plan their resources, activities, and timelines carefully to ensure that the project is completed within budget (Mäkinen, 2022) [25]. Milestones and deliverable schedules, when clearly outlined in the scope of work, provide benchmarks for progress monitoring and enable early identification of potential delays. Efficient scheduling allows contractors to optimize labor allocation, equipment usage, and material procurement, which contributes to consistent progress and timely delivery (Mangvwat, 2020).

Quality of deliverables is another dimension where fixed-price contracts exert significant influence on project performance. A fixed price creates financial pressure on contractors to complete the work within budget, which can motivate efficiency but also lead to shortcuts if not carefully monitored (O'leay, 2025). Clearly defined scope and quality standards help mitigate this risk by specifying the technical requirements, performance criteria, and compliance expectations. When quality specifications are included in the contract, contractors can plan and execute work to meet these benchmarks without compromising standards. On the other hand, ambiguous or incomplete quality requirements increase the risk of substandard outputs, resulting in disputes, rework, and delays. Hence, the relationship between fixed-price contracts and project performance is mediated by the alignment between cost constraints and quality expectations (Ezzat, 2025).

Risk allocation and management form a critical aspect of the relationship between fixed-price contracts and project performance. Fixed-price agreements transfer significant financial risk from the client to the contractor, making risk identification and mitigation essential for success (Kepher, 2024) [20]. Contractors must anticipate potential challenges, including unforeseen site conditions, regulatory changes, labor shortages, or supply chain disruptions, and plan contingencies accordingly. A clearly defined scope reduces uncertainty by delineating responsibilities, exclusions, and assumptions, which allows contractors to assess risks accurately and implement proactive strategies (Muturi, 2020) [29].

Effective change management processes, including documentation, evaluation, approval, and communication, are crucial for maintaining project performance. When these processes are weak, even minor modifications can cascade into significant disruptions, affecting schedule, cost, and quality. Thus, the contract structure directly influences the project's capacity to adapt while maintaining performance standards (Maina, 2024).

Stakeholder communication and expectation management represent another key dimension of performance under fixed-price contracts. The scope of work serves as a reference point for aligning expectations between the client, contractor, and other project stakeholders (Abeysinghe, 2022) [1]. A detailed scope ensures that all parties have a shared understanding of deliverables, timelines, and quality standards, reducing the potential for disputes and enhancing transparency. Regular reporting, progress updates, and structured feedback mechanisms further support alignment and accountability, allowing issues to be identified and

resolved proactively (Gbabo, 2024). Poor communication or ambiguity in expectations can result in misunderstandings, reduced client satisfaction, and compromised outcomes. Therefore, effective stakeholder management, supported by a clear scope and structured reporting mechanisms, is critical for maximizing performance under fixed-price arrangements (Kärki, 2023) [17].

Empirical studies indicate that projects executed under fixed-price contracts perform well when the scope is detailed, risks are effectively managed, and change processes are structured. Projects with well-documented deliverables, clear quality standards, and realistic budgets experience fewer cost overruns, maintain schedules, and achieve desired quality levels (Kepher, 2024) [20].

External environmental factors also shape the relationship between fixed-price contracts and performance. Economic volatility, inflation, labor market fluctuations, and supply chain disruptions directly affect contractors' ability to deliver projects within fixed budgets (Hassan, 2023). In regions where materials or skilled labor are scarce, contractors must make rapid operational adjustments, such as renegotiating supply contracts or re-sequencing tasks, to maintain adherence to cost and schedule targets. While risk identification and contingency planning can mitigate these challenges, the fixed-price nature of the contract imposes limits on absorbing unexpected costs, which may lead to trade-offs between quality, speed, and financial performance (Muturi, 2020) [29]. Consequently, the broader macroeconomic and regulatory environment interacts with contract design to influence project outcomes.

Contractors' experience and learning from previous fixed-price projects further influence performance outcomes. Experienced contractors are more adept at anticipating risks, planning contingencies, and managing resource allocations to achieve cost, schedule, and quality objectives (Gibben, 2025). They may have established frameworks for decision-making under uncertainty, allowing them to respond quickly to unexpected site conditions or client-initiated changes without compromising contractual obligations. In contrast, contractors with limited experience may misjudge risks, underestimate resource requirements, or inadequately plan for contingencies, resulting in poorer performance. The accumulation of organizational knowledge, therefore, is a key factor in determining how fixed-price contracts impact project outcomes across multiple dimensions.

Another emerging consideration is reputational risk and its influence on contractor behavior. Contractors recognize that poor performance on fixed-price contracts whether due to delays, cost overruns, or quality failures can adversely affect future business opportunities, client trust, and industry standing (O'Leary, 2025). Awareness of reputational consequences drives contractors to prioritize meticulous planning, rigorous monitoring, and proactive stakeholder engagement. This consideration often results in conservative decision-making, robust quality assurance, and enhanced communication practices, all of which improve the likelihood of successful project delivery.

2.3 Contractors' Perceptions of Fixed Price Contracts and Their Impact on Project Performance

Decision-making and flexibility are critical components of project management, particularly in the execution of fixed-price contracts. Fixed-price contracts establish a pre-determined contract amount that the contractor is obligated to deliver, which inherently reduces flexibility compared to cost-plus or time-and-materials contracts (Badi, 2021). Under such agreements, decision-making processes become highly structured because both contractors and clients must operate within the financial, temporal, and technical boundaries set by the contract. The execution phase requires balancing adherence to the contract with adaptive responses to unforeseen challenges, making decision-making and flexibility central to achieving successful project outcomes (Bajjou, 2022).

The first step in understanding decision-making in fixed-price contract execution involves examining the role of the scope of work. A clearly defined scope provides a foundation for informed decision-making by outlining the deliverables, activities, timelines, quality requirements, and exclusions associated with the project (Ikuabe, 2020). Contractors rely on this scope to make operational, financial, and technical decisions throughout the project lifecycle. For example, the allocation of labor, procurement of materials, and scheduling of tasks must align with the scope to prevent cost overruns or delays (Razkenari, 2020). In contrast, an incomplete or ambiguous scope increases uncertainty, requiring more frequent decision-making under pressure and raising the risk of errors or disputes. Consequently, the accuracy and comprehensiveness of the scope directly affect the contractor's ability to make timely and effective decisions (Wuni, 2020).

In fixed-price contract execution, financial decision-making is particularly critical due to the contractor's exposure to cost risk. Any decision involving additional resources, material substitutions, or process adjustments must consider the fixed budget constraints (Hassan, 2023). Contractors often need to evaluate alternative approaches to achieve project objectives without exceeding the agreed price. These decisions require careful analysis, risk assessment, and consultation with stakeholders, as improper choices can compromise profitability and overall project performance (Rumane, 2025). The financial implications of decision-making under fixed-price contracts make it distinct from more flexible contractual arrangements, where cost variances can be passed to the client (Abeysinghe, 2022) [1].

Time management decisions also play a central role in fixed-price contract execution. Projects with well-defined schedules and milestones allow contractors to plan resource allocation efficiently, anticipate potential delays, and sequence activities to optimize productivity (Kepher, 2024) [20].

Decision-making involves continuously monitoring progress against planned timelines and making adjustments as needed. However, the fixed-price structure limits the ability to introduce additional resources without financial impact, constraining flexibility. Therefore, decisions must balance maintaining schedule adherence with controlling costs, a trade-off that requires careful judgment and proactive planning (Mangvwat, 2020).

Quality-related decisions represent another area where decision-making is influenced by fixed-price contracts. While contractors are motivated to complete projects within budget, quality expectations remain a contractual requirement (Badi, 2021). Decision-making in this context involves selecting materials, methods, and processes that meet quality standards while minimizing costs. Poor decisions in this area can lead to rework, disputes, and delays, demonstrating how quality considerations intersect

with financial and scheduling decisions in fixed-price project execution (Ikuabe, 2022).

Contractors' perceptions of fixed price contracts include deeper operational and strategic considerations that shape performance across the full project lifecycle. One area that requires further attention is the role of tender preparation. Contractors often see the tendering stage as the most important point of influence over later decision quality. Tender teams must forecast material prices, labor needs, productivity rates, and equipment use with limited information (Badi, 2021). The fixed nature of the contract forces contractors to rely on early estimates that may not reflect the true project environment. When estimates are prepared with incomplete data, the contractor enters the contract with built in risk. This shapes the contractor's perception of vulnerability during execution. Contractors who invest time in detailed site investigations, supplier consultations, and scenario planning at tender stage report fewer disputes and more stable project outcomes (Hassan, 2023). This shows that tender stage decisions can reduce uncertainty and create a more realistic foundation for project execution.

Contractors perceive fixed price projects as less risky when internal structures support integrated decision making Innovation management is another factor that shapes contractor perceptions. Fixed price contracts can discourage innovation because contractors fear that new methods may carry unknown costs or technical risks (Badi, 2021). However, some contractors report that structure evaluation of new methods can reduce costs and improve schedule performance. For instance, using prefabricated components can shorten on site labor time and reduce exposure to weather delays. The perception of innovation shifts when contractors have systems for cost benefit analysis, pilot testing, and supplier verification. Contractors who view innovation as a controlled process rather than a gamble are more likely to incorporate new solutions that improve performance under fixed price constraints. This shows that organizational capability in innovation influences contractor perceptions and decision making.

Supply chain stability also plays a major role in shaping contractor views of fixed price contracts. Many contractors see supply chain unpredictability as one of the largest risks. Material shortages, transportation delays, and supplier failures can cause schedule disruptions that are difficult to absorb under a fixed price agreement (Razkenari, 2020). Contractors respond by building strong relationships with reliable suppliers or by diversifying sourcing channels. Some contractors establish framework agreements with suppliers that lock in prices for key materials to protect against inflation or scarcity. These strategies increase confidence during execution and reduce the need for reactive decisions that may compromise cost control. Contractors with stable supply networks view fixed price contracts as more manageable.

Contractor perceptions are also shaped by the use of performance measurement systems. Many contractors use dashboards, progress trackers, and cost monitoring tools to compare actual performance with planned targets (Badi, 2021). These tools allow contractors to identify trends such as declining productivity, rising costs, or delayed approvals. Early detection supports timely intervention and protects the budget. Contractors with strong measurement systems report more confidence in delivering fixed price projects because problems are discovered before they escalate. This strengthens the view that fixed price contracts reward structured and data guided decision making.

Contractors' perceptions are also shaped by the maturity of client management practices. Clients who follow clear processes for inspections, approvals, and payments create a stable environment that supports predictable decision making (Bajjou, 2022). When payment timelines are consistent, contractors can plan cash flow with confidence. This reduces financial stress and enables contractors to focus on productivity and quality. Contractors often describe good client management as a key factor that influences the overall success of fixed price project.

Cash flow planning is an additional area where contractors form strong perceptions. Fixed price contracts require contractors to fund early activities before receiving progress payments. Contractors must manage procurement, labor, and equipment costs while waiting for client payment cycles. Firms with strong financial reserves or access to credit view fixed price contracts as less risky. In contrast, firms with weak cash flow face pressure that affects decision making. They may delay procurement or reduce workforce numbers, which later causes performance issues. This shows that financial capacity shapes contractor perceptions of the feasibility of fixed price projects.

Contractors' risk perception is further influenced by site conditions. In projects with predictable soil profiles, accessibility, and regulatory environments, contractors find it easier to deliver within fixed budgets (Mangvwat, 2020). When site conditions are unknown or difficult, contractors experience higher levels of uncertainty. They may adopt conservative planning strategies or request risk allowances. These site related factors influence daily decisions about sequencing, equipment deployment, and workforce use.

Change management decisions are particularly challenging in fixed-price contracts due to the limited flexibility inherent in the contract structure. Requests for changes from clients, unforeseen site conditions, or regulatory modifications require formal evaluation and approval (Ingle, 2022). Contractors must assess the impact of each proposed change on cost, schedule, and quality before deciding whether to accept, reject, or renegotiate the terms. Effective change management requires structured decision-making processes, clear communication with stakeholders, and documentation of approvals. When these processes are weak, even minor changes can lead to disputes, cost overruns, and performance degradation. Conversely, robust change management frameworks enhance the contractor's ability to respond adaptively while maintaining alignment with contractual obligations, demonstrating the interplay between flexibility and structured decision-making (Wuni, 2020).

Stakeholder involvement in decision-making is another critical factor in fixed-price contract execution. Clients, contractors, subcontractors, suppliers, and regulatory authorities all have a role in shaping project decisions. Successful execution requires collaborative decision-making processes that integrate input from relevant stakeholders, particularly when resolving issues that may affect cost, schedule, or quality (Ezzat, 2025). Effective stakeholder engagement facilitates informed choices, reduces misunderstandings, and enhances accountability. Conversely, limited communication or unilateral decision-making can lead to errors, inefficiencies, or conflicts, which negatively affect project outcomes. Thus, structured

communication and stakeholder involvement are central to decision-making under fixed-price contracts (Mangvwat, 2020).

Flexibility in fixed-price contract execution is constrained by the contractual framework but can be enhanced through proactive planning and risk management. Contractors often incorporate contingency plans and allowances to manage uncertainties, enabling adaptive decision-making when unexpected challenges arise (Mangvwat, 2020). Flexibility may involve adjusting workflows, reallocating resources, or reprioritizing tasks while maintaining adherence to budget and schedule. While flexibility is limited compared to other contract types, structured planning and scenario analysis allow contractors to respond effectively to risks without violating contractual obligations. Therefore, decision-making and flexibility are interconnected, with successful project performance relying on balancing adherence to fixed-price constraints with adaptive responses to emerging issues (Gibben, 2025).

Formal decision-making frameworks demonstrate higher resilience and performance compared to those that rely on ad hoc or reactive approaches (Badi, 2021).

Another emerging factor is the influence of external economic and market conditions on contractors' perceptions and project performance. Macroeconomic variables such as inflation, exchange rate volatility, interest rates, and labor market dynamics can significantly impact material costs, labor availability, and subcontractor rates. In fixed-price projects, contractors cannot pass these increased costs to clients, which may necessitate reallocation of resources, cost-cutting measures, or reductions in project scope or quality. As a result, contractors' perception of economic uncertainty can influence risk management practices, decision-making speed, and the level of caution exercised in project execution (Hassan, 2023). This dynamic demonstrates that fixed-price contracts are not executed in a vacuum; rather, contractors must continuously evaluate external factors that interact with contractual constraints.

The role of organizational culture and internal project governance is another dimension shaping contractors' experiences. Contractors with strong internal communication, hierarchical clarity, and decision-making protocols are better equipped to navigate the rigidity of fixed-price contracts. Conversely, organizations with decentralized decision-making, unclear authority lines, or weak accountability mechanisms may struggle to respond efficiently to emerging challenges. Organizational culture affects the speed, quality, and consistency of decisions, influencing the contractor's ability to manage cost, schedule, and quality effectively (Mangvwat, 2020).

Contractor perceptions are further influenced by the contractual relationships and coordination mechanisms established with subcontractors and suppliers. Fixed-price contracts often require contractors to manage complex supply chains and subcontractor networks within fixed budgets.

Contractor perceptions are further influenced by the contractual relationships and coordination mechanisms established with subcontractors and suppliers. Fixed-price contracts often require contractors to manage complex supply chains and subcontractor networks within fixed budgets. Contractors perceive challenges when subcontractors' performance, payment schedules, or reliability is uncertain, as delays or quality issues can directly affect the contractor's obligations under the fixed-price contract (Razkenari, 2020). Effective coordination, including timely communication, performance monitoring, and dispute resolution with subcontractors, is critical to maintaining adherence to budget, schedule, and quality standards. Contractors' experiences in managing these relationships often determine their overall perception of risk and satisfaction with fixed-price arrangements.

Contractor perceptions are also shaped by legal and regulatory frameworks. In public construction or regulated sectors, compliance requirements can add layers of complexity that influence decision-making and flexibility. Contractors must navigate permitting processes, environmental regulations, and occupational health and safety requirements, often within rigid timeframes and budgets (Ikuabe, 2022). Perceptions of regulatory burden, uncertainty, or inconsistency can impact contractors' risk assessment, resource allocation, and contingency planning. For instance, unexpected delays in permit approvals may require contractors to reschedule tasks, adjust labor deployment, or renegotiate supplier contracts all within fixed-price constraints. These factors underscore that contractors' perceptions of fixed-price contracts are not limited to the contract text itself but extend to the broader institutional environment.

3. Research Methodology

3.1 Research design

The study design comprises of a collection of tools and strategies tailored for specific purposes, outlining both the rationale and procedures for their use. Accordingly, this research will employ a cross-sectional survey design and adopted a mixed method to collect primary data (Maier, 2023). This approach allowed data to be gathered at one point in time, offering a snapshot of the variables under investigation.

3.2 Target population

The target population for this study were engineers, project managers and accountants from construction companies in Nalolo District. The sample size consisted of 100 engineers, project managers and accountants from construction companies Nalolo District.

3.3 Sampling

The study employed a convenience sampling technique, a form of non-probability sampling in which participants were selected based on their availability and willingness to take part (Stratton, 2023) [48]. This method was commonly used when there were constraints related to time, resources, or participant accessibility. In this study, convenience sampling was chosen for its practicality and effectiveness in accessing participants within the limitations of the study's timeframe and budget. It allowed for the prompt and efficient collection of data from individuals who were readily accessible and willing to participate (Pace, 2021) [42].

3.4 Data Collection Methods

The primary research tool used in the study was a semi-structured questionnaire, which included both closed-ended and open-ended questions (Saglam, 2024) [46]. This design is particularly well-suited for mixed-method research, as it allows for the collection of both quantitative and qualitative data. Primary data was gathered using structured surveys,

involving standardized questionnaires administered mainly through electronic platforms, with some face-to-face interviews conducted as needed. This approach enabled the researcher to collect comprehensive and relevant data on the study variables efficiently (Pace, 2021) [42].

3.5 Data Analysis

STATA was applied for data entry and statistical analysis, whereas Microsoft Excel 365 was utilized to display descriptive statistics through charts and graphs. Inferential analysis was carried out using the Chi-square test to determine relationships between categorical variables. Thematic analysis was used to handle qualitative data by systematically identifying, organizing, and interpreting recurring patterns within participants' responses. In the context of mixed-methods research, this approach offered deeper insights and perspectives that complemented and enriched the quantitative findings.

3.6 Ethical Consideration

The study upheld ethical aspects, including obtaining informed consent, safeguarding participant confidentiality and privacy, and utilizing acquired information solely for academic purposes. Stringent confidentiality measures were maintained throughout the research process. Equal and unbiased treatment was given to all participants, who had the choice to participate or decline without facing any adverse effects. The research carried no risk of physical harm to participants.

4. Presentations of the Findings

4.1 The effects of scope of work in fixed contract on project performance

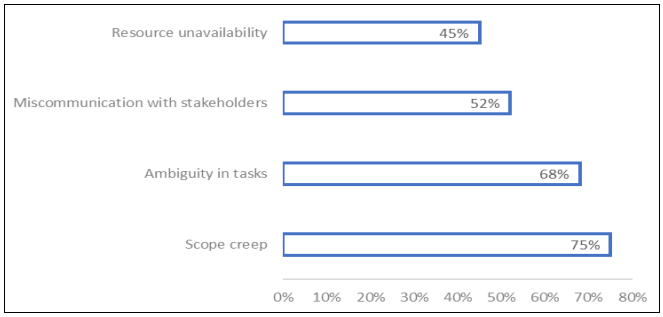

Fig 4.1.1: Causes of project delays

Scope Creep (75%) and Ambiguity in Tasks (68%) are the dominant causes of project delays related to scope. This identifies the areas where initial project planning and change control processes need to be most robust.

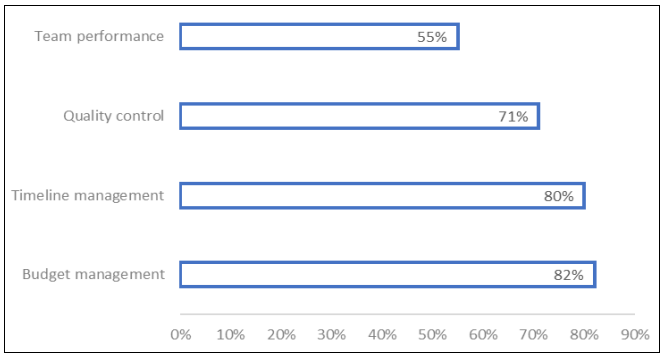

Fig 4.1.2: Analysis of Areas Affected by Poor Scope

Poorly defined scope has a pervasive negative impact, affecting all major project areas. Budget Management (82%) and Timeline Management (80%) are the most severely impacted, followed closely by Quality Control (71%).

4.2.1 The relationship between a fixed contract and project performance

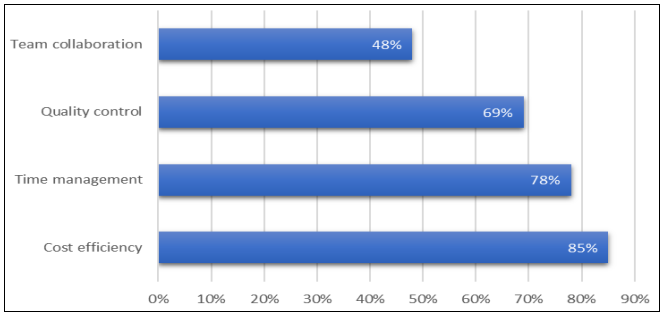

Fig 4.3.1: Analysis of Most Impacted Performance Aspects

Fixed contracts impact all core areas of performance. Cost Efficiency (85%) is the most significantly impacted, which is inherent to the model. Time Management (78%) and Quality Control (69%) are also heavily influenced, demonstrating the all-encompassing effect of this contract structure.

Chi-Square Tests 4.2.2

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	96.667[a]	6	.002
Likelihood Ratio	112.288	6	.002
Linear-by-Linear Association	1.820	1	.007
N of Valid Cases	100		

The chi-square test assessed the relationship between the factors that most enhance performance in fixed-price contracts and the most frequent project outcomes under such contracts. The results indicate a significant association between the two variables ($\chi^2 = 96.667$, df = 6, p = 0.002). This suggests that specific performance-enhancing factors influence the likelihood of achieving particular project outcomes. For instance, projects where proper cost estimation and effective supervision are prioritized are more likely to be completed on time and within budget. Similarly, projects that benefit from experienced contractors and strong client cooperation tend to avoid overruns and delays. These findings highlight that emphasizing key performance factors can substantially improve project success under fixed-price contracts.

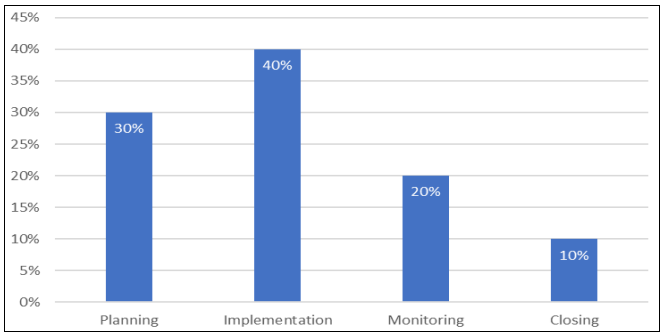

Fig 4.2.3: Stage Most Affected by Fixed Nature of Contract

The implementation stage was cited by 40% of respondents as most affected by the fixed nature of contracts, followed by planning (30%). This indicates that while planning defines cost and deliverables, actual challenges emerge during implementation, where contractors must work within fixed limits. Rigid budgets and limited scope for change during execution can restrict flexibility, affecting work progress and resource allocation.

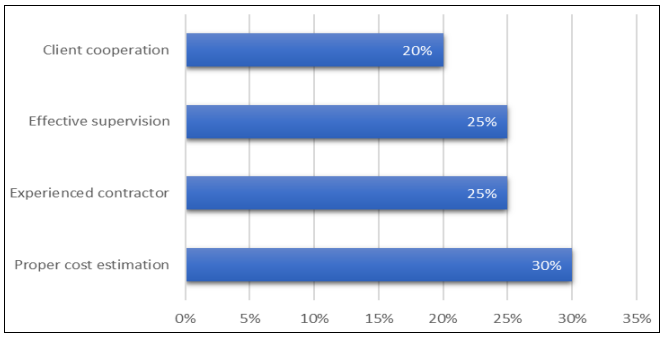

Fig 4.2.4: Key Factor Enhancing Performance

Proper cost estimation (30%) was identified as the most important factor enhancing project performance, followed by experienced contractors (25%) and effective supervision (25%). Client cooperation (20%) also plays a supporting role. Accurate cost estimation ensures that prices reflect real conditions, reducing disputes and overruns. Experience and supervision help in managing risks and maintaining quality. These results indicate that successful fixed-price projects depend on both technical and managerial competence.

4.3 Local contractor's perception on using fixed price contracts

4.3.1 Main Reason for Accepting Fixed-Price Contracts

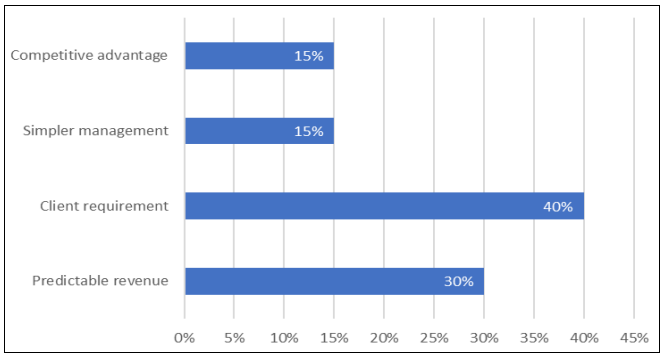

Fig 4.3.1: Main Reason for Accepting Fixed-Price Contracts

The most cited reason for accepting fixed-price contracts was client requirement (40%), followed by predictable revenue (30%). This means contractors often adopt fixed-price arrangements due to client preference or tender conditions, rather than by choice. The desire for predictable income also makes such contracts appealing, though 15% mentioned simpler management and 15% cited competitive advantage as motivating factors

4.3.2 Motivation to Continue Bidding for Fixed Contracts

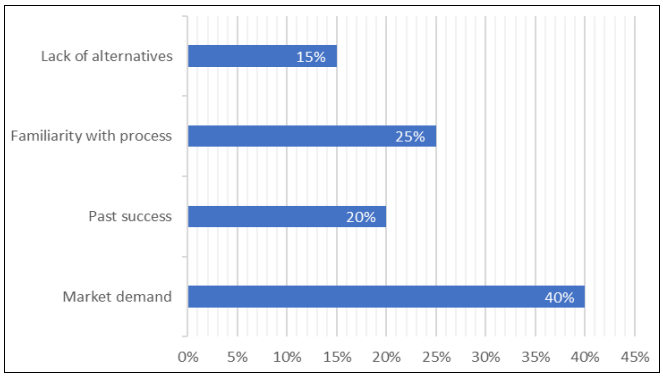

Fig 4.3.2: Motivation to Continue Bidding for Fixed Contracts

Most respondents (40%) continue bidding for fixed-price contracts due to market demand, while 25% cited familiarity with the process. Past success (20%) and lack of alternatives (15%) were less frequent. This implies that contractors are driven more by market conditions and necessity than by preference. In markets where clients favor fixed-price arrangements, contractors must adapt to stay competitive.

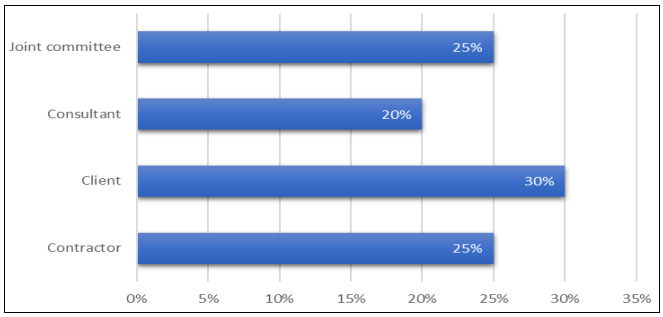

Fig 4.3.4: Key Decision-Makers During Project Execution

Most respondents (30%) stated that the client makes key decisions during execution, while 25% each said the contractor or a joint committee is responsible, and 20% pointed to the consultant. This suggests that decision-making authority is not centralized but shared across parties. Collaborative committees are used in some projects to balance decisions and reduce bias.

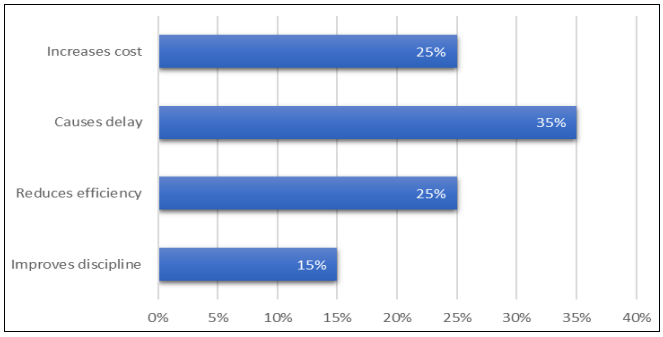

Fig 4.3.5: Effect of Limited Flexibility on Project Performance

Findings reveal that 35% of respondents believe limited flexibility causes delays, 25% said it reduces efficiency, and another 25% stated it increases costs. Only 15% felt it improves discipline. This means that while fixed contracts promote control, they often hinder timely and efficient project execution. The inability to adjust decisions quickly can lead to rework and time loss, especially when formal approvals take long to obtain approval.

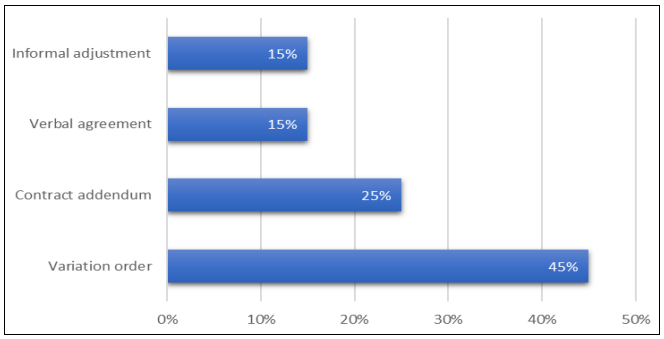

Fig 4.4.6: Forms of Flexibility Granted During Execution

Most respondents (45%) said that flexibility is granted through variation orders, while 25% mentioned contract addenda, and 15% each noted verbal agreements or informal adjustments. This shows that despite the rigidity of fixed-price contracts, formal procedures such as variation orders still provide a structured way to manage necessary changes. Informal adjustments, though common, can lead to disputes if not properly documented.

5. Discussions of the Findings

5.1 The effects of scope of work in fixed contract on project performance

The study results demonstrated that the scope of work (SoW) plays a decisive role in shaping project performance under fixed-price contracts, confirming findings from prior literature. The scope of work functions as the operational and financial framework within which project outcomes are defined, managed, and delivered (Gitahi, 2023) [13]. The literature emphasized that a clearly articulated scope ensures that both the client and contractor share a mutual understanding of deliverables, quality standards, timelines, and exclusions, reducing uncertainty and minimizing the likelihood of disputes (Hassan, 2023). The study findings align with this assertion, showing that scope creep (75%) and ambiguity in tasks (68%) were the leading causes of educational infrastructure. These issues directly mirror what Rumane (2025) describes as "scope-induced risk," where inadequate definition at the contract stage leads to uncontrolled modifications during implementation. This convergence between literature and empirical evidence underscores that the quality and completeness of the SoW are central to maintaining cost, schedule, and quality performance in fixed-price environments.

Scope changes remain a significant challenge in fixed-price projects. The study found that the primary causes of scope changes in Nalolo were client requests (35%), followed by design modifications (30%), site conditions (20%), and poor initial planning (15%). This hierarchy mirrors the findings of Rumane (2025) and O'Connor (2020), who observed that most scope variations in fixed-price projects originate from client-driven adjustments and design errors rather than contractor inefficiencies. The prevalence of client-initiated changes underscores the tension between flexibility and financial control inherent in fixed-price models. While clients may seek to refine project requirements during execution, contractors must operate within rigid budgetary and scope constraints. As Maina (2024) notes, every scope alteration in a fixed-price context demands formal renegotiation or a variation order, processes that consume time and increase administrative overhead.

5.2 The relationship between a fixed contract and project performance

The relationship between fixed-price contracts and project performance has long been a subject of discussion in project management research due to its direct implications for cost efficiency, schedule adherence, and quality control. The current study examined this relationship using both theoretical insights and empirical data from construction and engineering projects. The findings align with earlier literature showing that fixed-price contracts significantly influence key performance areas—most notably cost management, time control, and quality standards though their rigid nature can limit flexibility, innovation, and adaptability during project execution.

Fixed-price contracts, by definition, fix the total project price before work begins, transferring much of the financial risk from the client to the contractor (Ford, 2024). The study results confirm this principle: 60% of respondents reported that contractors bear the highest performance risk under fixed-price contracts, while only 20% attributed major risk to clients. This aligns with Kepher (2024) [20], who observed that fixed-price contracts shift accountability for both cost and time performance to contractors, requiring them to manage uncertainties within a fixed budget. The study also found that inaccurate cost estimation (35%) was the most common source of performance problems. This supports the view of Ezzat (2025) and Varma (2025) [50], who emphasized that accurate upfront estimation is crucial because once a price is fixed, cost overruns directly reduce the contractor's profit margins. The findings suggest that contractors who fail to estimate costs correctly or include adequate contingencies face financial strain that may ultimately affect schedule and quality outcomes.

Cost efficiency was identified by 85% of respondents as the performance metric most influenced by fixed-price contracts, confirming that the primary goal of this model is financial predictability. This finding supports previous research (Gibbens, 2024; Nishaant, 2025), which argued that fixed contracts promote disciplined cost control by enforcing strict adherence to pre-agreed prices. Clients benefit from budget certainty, while contractors have strong incentives to prevent cost escalation. However, this emphasis on cost can create trade-offs with other performance dimensions. The study revealed that while 35% of projects were completed within budget, only 25% achieved both cost and time targets simultaneously. Few projects that were costed correctly were completed within the time frame that gave confidence in the end users.

From an implementation perspective, the study's results confirm that the fixed nature of contracts most strongly affects project execution. Forty percent of respondents identified the implementation stage as the most impacted, underscoring that once construction begins, financial and operational constraints tighten. This finding echoes Hassan (2023), who stated that implementation challenges in fixed-

price contracts often stem from inflexible cost structures that leave little room for adjustment when unforeseen issues arise. The study also shows that when strong supervision and communication frameworks are present, projects manage these challenges more effectively. Therefore, successful performance under fixed-price arrangements depends not only on contract clarity but also on adaptive project management practices.

5.3 Local contractor's perception on using fixed price contracts on project performance

The findings of this study on decision-making processes and flexibility in fixed price contract execution provide a deeper understanding of how contractual rigidity affects project delivery, particularly in educational infrastructure projects. The literature establishes that fixed price contracts are designed to achieve financial discipline, cost predictability, and clear accountability between clients and contractors (Hassan, 2023; Mangvwat, 2020). However, the results of this study reveal that while these contracts achieve cost control, they simultaneously limit adaptability during project execution. This duality between control and flexibility represents a persistent challenge in project management, especially in developing economies where unforeseen conditions and policy changes are common. The study found that decision-making under fixed price arrangements is largely hierarchical and client-driven, with flexibility influenced primarily by contract clauses, project complexity, and stakeholder collaboration. These findings confirm earlier observations by Mäkinen (2022) [25] and Gitahi (2023) [13] that fixed contracts require a delicate balance between maintaining cost certainty and allowing adjustments to accommodate changing realities during execution.

The predominance of top-down decision-making, reported by 72% of respondents, reflects a strong hierarchical approach where authority rests mainly with clients or senior project sponsors. This finding supports Mäkinen's (2022) [25] argument that fixed price contracts are designed to centralize control, ensuring that budgetary and time constraints are tightly managed. In practice, this concentration of power allows for swift, unilateral decisions, especially when approval processes are formalized through contract administration systems. However, the downside of this approach, as indicated by the study, is that it discourages lower-level decision-making and limits innovation. Contractors and site managers often have limited autonomy to make immediate technical adjustments, even when such decisions could improve efficiency or quality. This structure aligns with Salim's (2021) [41] observation that fixed contracts promote control at the expense of responsiveness, leading to slow reactions when projects face unforeseen conditions.

The results further indicate that decision-making authority is shared across multiple parties, with 30% of respondents identifying the client as the main decision-maker, 25% each citing contractors and joint committees, and 20% pointing to consultants. This distribution shows that while the client dominates final approvals, the decision-making process still involves several actors. Such shared responsibility reflects an effort to incorporate consultative or collaborative elements into fixed contract management. The presence of joint committees in some projects suggests attempts to promote transparency and reduce bias, consistent with Abeysinghe's (2022) [1] view that collective governance mechanisms enhance trust and reduce disputes. However, since top-down authority remains prevalent, these committees often serve more advisory than decision-making roles, which limits their ability to influence major contract decisions. The study confirms that, although collaboration is recognized as important, institutional culture and rigid procedures continue to reinforce centralized control.

The study's findings also have implications for stakeholder relationships and communication. As Abeysinghe (2022) [1] and Varma (2025) [50] emphasize, collaborative communication enhances joint problem-solving in construction projects. However, the dominance of top-down decision-making found in this study suggests that communication flows are often vertical rather than interactive. This can create adversarial relationships between clients and contractors, especially when project changes require negotiation. The limited use of consultative or collaborative decision-making (21.3% and 24.3%, respectively) demonstrates that many stakeholders still operate within rigid bureaucratic frameworks that prioritize compliance over collaboration. From the findings it entails that the end users have not been actively involved in the implementation of the projects. This imply that educational infrastructure is not adequately addressing special and specific needs faced various communities. The communication between the contractor and the supervisor lacks transparency that has been difficult for the communities to hold accountable the duty bearer and implementing officers. This undermines principles of project performance which values stakeholders' participation other than time cost and quality control. In educational projects, this can be detrimental, as community and institutional input are important for ensuring that infrastructure meets user needs. The findings highlight the need to strengthen participatory decision-making frameworks that allow all stakeholders to contribute meaningfully during project execution.

External factors such as inflation, currency fluctuations, and environmental disruptions further complicate decision-making under fixed price contracts (Ezzat, 2025). The study's findings that cost escalation and unforeseen conditions are major reasons for revising decisions underscore this challenge. In many developing contexts, these factors are unpredictable, making it unrealistic to expect complete adherence to fixed terms. Mangvwat (2020) and Muturi (2020) [29] both noted that when such external shocks occur, rigid contracts tend to fail, leading to disputes or abandoned projects.

6. Conclusion

This study examined the effectiveness of fixed priced contracts in terms of scope of work, cost, decision-making processes and flexibility in the execution of fixed price contracts within educational infrastructure projects. The findings indicate that fixed price contracts are largely perceived as rigid, providing cost certainty, clear scope, and accelerated decision-making. However, their inflexibility presents challenges in accommodating changes, managing risks, and resolving unforeseen issues, which can result in project delays and constrain problem-solving. Top-down decision-making predominates under fixed contracts, reflecting the need for swift authoritative decisions, though collaborative and consultative approaches remain important

for complex situations. While formal mechanisms for approving changes exist, they are inconsistently applied, revealing gaps in change control processes. Key factors influencing flexibility include contract clauses, project complexity, stakeholder collaboration, and resource availability. Despite these challenges, contractors report moderate to high satisfaction with outcomes, indicating that the benefits of financial predictability and structured execution often outweigh the limitations of inflexibility. The study further highlights the critical role of stakeholder engagement, institutional governance, and capacity building in enabling effective decision-making and adaptive responses under rigid contractual frameworks. Overall, fixed price contracts are effective tools for controlling costs and ensuring accountability in educational infrastructure projects. Yet, their success depends on balancing contractual rigidity with mechanisms for flexibility, collaborative decision-making, and proactive risk management. Strengthening these aspects can enhance project performance, safeguard quality, and ensure that infrastructure meets intended educational objectives.

7. Recommendation

Based on the findings of this study, several recommendations can be made to enhance the effectiveness of fixed price contracts in educational infrastructure projects. First, contract design should incorporate clear provisions for change management, including formal procedures for approving modifications, handling unforeseen circumstances, and adjusting timelines and resources. This would reduce disputes, scope creep, and delays while maintaining cost control. Second, project managers and contractors should adopt a balanced approach to decision-making that combines the speed of top-down decisions with the inclusivity of collaborative and consultative processes. Engaging key stakeholders in the contractual agreement is critical decisions and can improve problem-solving, ensure alignment with project objectives, and enhance overall performance.

Capacity building is essential for all parties involved in fixed price contracts. Contractors, project managers, and government officials should receive training in risk assessment, adaptive decision-making, and negotiation strategies to navigate the rigidity of these contracts effectively. This will enable them to respond proactively to changes without compromising quality, budget, or schedule. Fourth, monitoring and evaluation systems should focus not only on compliance with timelines and budgets but also on outcomes and value for money. Such an approach would provide decision-makers with the flexibility to introduce necessary adjustments while remaining accountable, ensuring projects achieve intended educational objectives.

Contracts should be drafted with greater attention to risk allocation, explicitly identifying potential external factors such as supply chain disruptions, inflation, or environmental challenges, and including contingency measures. This will help contractors plan more effectively and reduce the likelihood of stalled projects or disputes. Finally, fostering stronger communication and collaboration between clients, contractors, and other stakeholders is recommended to facilitate adaptive decision-making, improve relationships, and ensure transparency. By implementing these measures, fixed price contracts can achieve a balance between financial predictability and operational flexibility, ultimately improving project performance and the quality of educational infrastructure delivered.

8. Acknowledgment

I am deeply grateful to the Divine Creator, the ultimate source of life, knowledge and insight, for guiding and blessing me on this research journey. I sincerely thank my research supervisor, for his unwavering support, guidance and patience. It was an honor to work under his leadership and I deeply appreciate the valuable insights and wisdom he shared with me. His expertise and commitment significantly influenced the results of this project.

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